

## PRODUCT DATA SHEET

# Sika MonoTop®-634 HP

HIGH PERFORMANCE AND MULTI USE, POURABLE CEMENTITIOUS MORTAR FOR FLOORING AND CONCRETE REPAIR WORKS, FILLING AND ANCHORING OF HIGH THICKNESS



### DESCRIPTION

Sika MonoTop®-634 HP is a one component, pourable fiber reinforced cementitious mortar (SCC technology) used for flooring and concrete repair works, filling and anchoring, meeting the requirements of EN 1504-3 (class R4), EN 1504-6 and EN 13813 (CT-C50-F7-AR6). Sika MonoTop®-634 HP is free flowing expansion compensated and extreme low shrinkage cementitious mortar.

### USES

Sika MonoTop®-634 HP is a high performance shrinkage compensated, free flowing cementitious mortar for layer thickness of between 10mm and 100mm, suitable for:

- Concrete restoration or by recasting with mortar into formworks (beams, columns, bridge decks).
- Concrete elements strengthening works by reinforced jacketing with the use of pourable concrete technique
- Reconstruction of cementitious industrial floors with high abrasion resistance.
- Anchoring applications such as bolts (anchor, lag, etc.).
- Filling by pouring or pumping of cavities, cracks, gaps and recesses in concrete, masonry, rocks, etc.
- Restoration work (Principle 3, method 3.2 of EN 1504-9:2008). Repair of spalling and damaged concrete in buildings, bridges, infrastructure and superstructure works by recasting with concrete.
- Structural strengthening (Principle 4, method 4.2 of EN 1504-9:2008). Installing bonded rebars in preformed or drilled holes in concrete.
- Structural strengthening (Principle 4, method 4.4 of EN 1504-9:2008). Increasing the bearing capacity of the concrete structure by adding mortar.
- Flooring applications (EN 13813, CT-C50-F7-AR6). Reconstruction of cementitious interior or exterior industrial floors with high abrasion/ wear resistance.

### CHARACTERISTICS / ADVANTAGES

- Easy to use, ready to mix powder; only add water
- Adjustable SCC consistency (Sika® ViscoCrete® technology), showing excellent flow properties, workability and stability
- High abrasion / wear resistance, in class AR6 with BCA method
- No segregation or bleeding
- Remarkable shrinkage compensation (both in plastic and hardening stage)
- Pourable and/or pumpable
- For application thickness of between 10mm and 100mm (without aggregates addition)
- In accordance with EN 1504-3 standard as repair mortar (Class R4)
- In accordance with EN 1504-6 standard as anchoring product
- In accordance with EN 13813 standard as flooring applications mortar (CT-C50-F7-AR6)
- A1 fire rating

### APPROVALS / CERTIFICATES

- CE marking and Declaration of Performance as Repair mortar PCC, Class R4, for structural repair of concrete structures in buildings and civil engineering works according to EN 1504-3:2005, based on certificate of factory production control issued by notified factory production control certification body and type testing.
- CE marking and Declaration of Performance as Anchoring product for strengthening concrete by installing reinforcing steel (rebars) in buildings and civil engineering works according to EN 1504-6:2006, based on certificate of factory production control issued by notified factory production control certification body and type testing.
- CE marking and Declaration of Performance as Cementitious floor screed material, CT-C50-F7-AR6 according to EN 13813:2002, based on type testing and factory production control.

## PRODUCT INFORMATION

<b>Chemical base</b>	Portlad cement, selected aggregates, synthetic fibers and special additives
<b>Packaging</b>	25 kg bags
<b>Appearance / Colour</b>	Grey powder with fibers
<b>Shelf life</b>	12 months from date of production
<b>Storage conditions</b>	Store properly in original and unopened, sealed and undamaged packaging, in dry conditions at temperatures between +5°C and +35°C.
<b>Density</b>	Fresh mortar density: ~ 2.2 kg/lt (EN 1015-6)
<b>Maximum Grain Size</b>	~ 3.5mm
<b>Soluble Chloride Ion Content</b>	≤ 0.05% (EN 1015-17)

## TECHNICAL INFORMATION

<b>Compressive Strength</b>	<b>1 day</b>	<b>7 days</b>	<b>28 days</b>	<b>Requir. (R4) @ 28 days</b>	(EN 12190)
	≥ 20 MPa	≥ 40 MPa	≥ 52 MPa	≥ 45MPa	
<b>Modulus of Elasticity in Compression</b>	<b>Results</b>		<b>Requirements (R4)</b>		(EN 13412)
	~ 26GPa		≥ 20GPa		
<b>Tensile Strength in Flexure</b>	<b>1 day</b>	<b>7 days</b>	<b>28 days</b>		(EN 196-1)
	≥ 3 MPa	≥ 5 MPa	≥ 8 MPa		
<b>Tensile Adhesion Strength</b>	<b>Results</b>		<b>Requirements</b>		(EN 1542)
	≥ 2.0 MPa		≥ 2.0 MPa		
<b>Restrained Shrinkage / Expansion</b>	> 2.0 Mpa			(EN 12617-4)	
<b>Abrasion Resistance</b>	AR6			(EN 13892-4)	
<b>Thermal Compatibility</b>	≥ 2.0 MPa (Adhesion after 50 cycles)			(EN 13687-1)	
<b>Reaction to Fire</b>	Euroclass A1			(EN 13501-1)	
<b>Capillary Absorption</b>	≤ 0.5 kg m <sup>-2</sup> h <sup>-0.5</sup>			(EN 13057)	
<b>Chloride Ion Ingress</b>	<b>Results</b>		<b>Requirements</b>		(EN 13396)
	< 0.01 %*		Declared value		
* Value after 6 months at 10 mm depth					
<b>Carbonation Resistance</b>	dk ≤ control concrete (MC (0.45))			(EN 13295)	

## APPLICATION INFORMATION

<b>Mixing Ratio</b>	3.5 - 4.0 lt of water per 25kg bag	
<b>Consumption</b>	~ 2.0 kg of powder per 1 mm thickness per m <sup>2</sup> , depending on the substrate's roughness and fresh mortar's density.	
<b>Yield</b>	25 kg of powder yields approximately 12.5 litres of mortar	
<b>Layer Thickness</b>	10 mm min. / 100 mm max.	
<b>Consistency</b>	~ 230 mm 70-75 cm	(Sika Internal Method) (EN12350-2 with Abrahms cone)
<b>Ambient Air Temperature</b>	+5°C min. / +35°C max.	
<b>Substrate Temperature</b>	+5°C min. / +35°C max.	
<b>Pot Life</b>	~ 30 minutes at +20°C	

# APPLICATION INSTRUCTIONS

## SUBSTRATE QUALITY / PRE-TREATMENT

### Concrete:

The substrate must be structurally sound, thoroughly clean and free from dust, dirt, and loose material, surface contamination such as oil or grease, cement laitance which reduce bond, prevent suction or impair the mortar's flow. Delaminated, weak, damaged and deteriorated concrete and where necessary sound concrete - but not to the detriment of the structural integrity - shall be removed by suitable mechanical preparation techniques, such as high-pressure water cleaning or sandblasting. No vibration cleaning methods are preferable. Roughen concrete surface to expose aggregates to 2 mm depth, in accordance with EN 1766 or CSP 5 from ICRI Guidelines. The edges of the area affected by the intervention will have to be cut perpendicular (90 degrees) up to a minimum depth of 5 mm. The concrete's tensile strength (pull off) shall be > 1.5 MPa. Follow the directions given by the Supervising Officer or Qualified Engineer.

### Steel:

Steel reinforcement surface must be free from rust products, mill scale, mortar, concrete residues, oil, grease, dust and other loose materials which may reduce bond or may contribute to corrosion. In case of rust, clean uniformly the whole circumference of the steel bars (where applicable) by using abrasive blast cleaning techniques or high pressure waterblasting to Sa 2 in accordance with ISO 8501. Protect cleaned bars from further contamination, prior to application of the mortar.

### Formwork:

Any formwork shall be capable of withstanding the load and forces imposed on it. Formwork shall be clean and placed in position after preparation of the substrate and reinforcement. Release agents such as Sika® Separol® series, shall be applied prior to placing the bars into position to avoid contact with prepared substrate. Formwork shall be correctly designed in order to allow air and water bleed to escape, to support pouring technique, to provide a complete filling, to ensure free flowing, to prevent leakage of the product, e.t.c. Please consult Sika Hellas' S.A. technical support for more specific directions.

*Reference should also be made to EN1504-10 for specific requirements.*

## MIXING

Sika MonoTop®-634 HP can be mixed with a low speed (~500 r.p.m.) electrical hand drill mixer with vertical axis for 1 to 2 bags taking care not to entrap air in the mix, or using a force action pan mixer for 2 to 3 bags - or more - at once, depending on the type and size of mixer. Pour the water in the correct desired proportion into a suitable mixing container. While stirring slowly, add the powder gradually in the water and mix thoroughly at least for 3 minutes, adding additional water during the mixing time if necessary up to the maximum specified amount, until the required homogeneous and lump-free consistency is achieved. For larger mixes the mixing time could be extended (up to

5 minutes or as necessary) until the mortar is homogeneously mixed with no lumps and no remaining dry powder. Mix full bags for best results. 25 kg of Sika MonoTop®-634 HP powder is mixed with 3.5 - 4.0 L of water depending on the required consistency.

## APPLICATION

Sika MonoTop®-634 HP can be applied manually using traditional techniques by pouring into the cavities or the formworks. If necessary, it can be mechanically pumped by means of standard equipment (e.g. Turbosol, Putzmeister).

### Pre-Wetting:

Concrete surfaces shall be saturated with clean water minimum 2 hours before application, ensuring that all pores and pits are adequately wet. The surface shall not be allowed to dry before application of the mortar. Just before application, remove excess water and ensure there is no standing water on the surface. The surface shall achieve a dark matt appearance without glistening and surface pores and pits shall not contain water (saturated surface dry - SSD). Use pressurised air (oil free) to blow away excess water in difficult to reach areas.

### Pouring / Filling:

The product should be poured directly on the wet mat substrate or inside the formwork prepared for the casting. By using more than one mixer and with the proper organization, you can pour the fresh material reducing construction joints. After mixing Sika MonoTop®-634 HP, leave the mortar to stand for ~1-2 minutes; stir again with a trowel and then pour immediately into sealed, rigid - stable prepared formworks. To make optimum use of the product's expansion properties apply the mortar as quickly as possible (within max. 15 minutes). Pot life shall also be taken into consideration, adjusting for climatic conditions, when planning the work duration.

### Bonding primer / Reinforcement Corrosion Protection:

On a well prepared and roughened substrate, a bonding primer is generally not required. Where a bonding primer and/or a reinforcement coating is required (e.g. Sikadur®-32 EF, Sika MonoTop®-910 or SikaTop® Armatec®-110 EpoCem®) refer to the relevant Product Data Sheet for more detailed information. In any case, the bonding primer / reinforcement corrosion protection shall be applied on a pre-wet substrate and subsequent application of Sika MonoTop®-634 HP shall be applied wet on wet. Open time of the bonding primer and/or the reinforcement corrosion protection shall be taken into account if it fulfills the application demands.

## CURING TREATMENT

Protect the freshly applied mortar from early dehydration and/or premature drying by using the relevant curing methods (at least for 24 hours), e.g. curing compound such as Sika® Antisol® or Sikafloor® Proseal once surface water has evaporated. Use suitable curing covers such as jute and water, plastic sheets or other suitable membranes.

## CLEANING OF EQUIPMENT

Removal of fresh remnants from tools and application equipment can be carried out using water immediately after use. Hardened / cured material can only be mechanically removed.

## FURTHER DOCUMENTS

For concrete repair works refer to the Sika Method of Statement for "Restoring Concrete Structures by Re-casting Using Sika® Ready to use Mortars" (Ref. 8503202) for more information regarding repair system application, substrate preparation and/or refer to the recommendations provided in EN 1504-10.

## IMPORTANT CONSIDERATIONS

- In case of floor castings that may exceed 100 mm thickness, please consult our technical department.
- Mixing must always be performed with mechanical means; hand mixing does not allow obtain the optimum workability.
- Do not add water to the product above the recommended dosage.
- Do not add cement or any other substances that may impair its properties.
- Do not add water or fresh mortar in a mix that has already started to set.
- Avoid application under direct sunlight and/or strong wind.
- Apply only on sound, suitably prepared surfaces.
- In case of floor casting, especially outdoors, avoid too rapid drying of the product in the early days of curing.
- Do not cast floors under bad weather conditions, which could affect in a negative way setting and hardening process of the product.
- Protect the applied product from sun and wind for at least 24 hours after application.
- Always check the material after pumping
- Ensure formwork is strong enough to hold the fresh mortar and sealed to prevent leakage
- Cure exposed surfaces immediately with protective sheet or membrane. Shield the fresh mortar from direct sun, wind and frost.
- Finish exposed surface as desired as soon as the mortar has started to stiffen. Do not add additional water on surface.
- Avoid the free fall of the material to prevent segregation of the aggregates.

Sika Hellas ABEE  
15 Protomagias Str.  
14568 Kryoneri  
Attica-Greece  
Tel.: +30 210 8160 600  
Fax: +30 210 8160 606  
www.sika.gr | sika@gr.sika.com



Product Data Sheet  
Sika MonoTop®-634 HP  
May 2018, Version 01.02  
020302040030000159

## BASIS OF PRODUCT DATA

All technical data stated in this Product Data Sheet are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control.

## LOCAL RESTRICTIONS

Please note that as a result of specific local regulations the performance of this product may vary from country to country. Please consult the local Product Data Sheet for the exact description of the application fields.

## ECOLOGY, HEALTH AND SAFETY

For information and advice on the safe handling, storage and disposal of chemical products, users shall refer to the most recent Safety Data Sheet (SDS) containing physical, ecological, toxicological and other safety-related data.

## LEGAL NOTES

The information, and, in particular, the recommendations relating to the application and end-use of Sika products, are given in good faith based on Sika's current knowledge and experience of the products when properly stored, handled and applied under normal conditions in accordance with Sika's recommendations. In practice, the differences in materials, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any written recommendations, or from any other advice offered. The user of the product must test the product's suitability for the intended application and purpose. Sika reserves the right to change the properties of its products. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users must always refer to the most recent issue of the local Product Data Sheet for the product concerned, copies of which will be supplied on request.

SikaMonoTop-634HP-en-GR-(05-2018)-1-2.pdf